
Iowa Freight Advisory Council

September 14, 2018

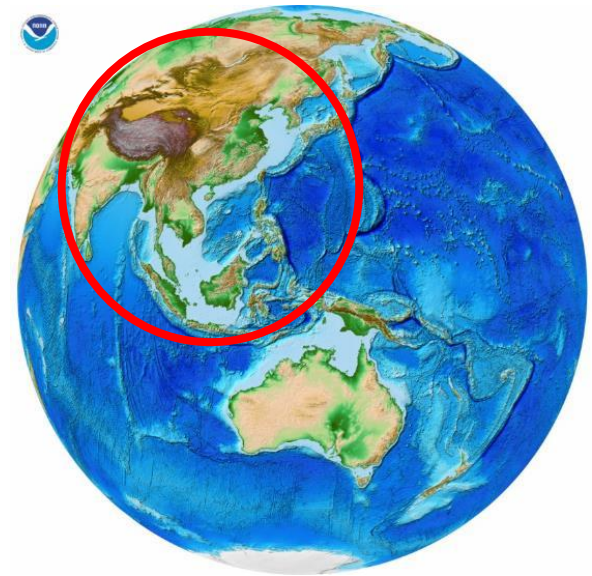


The table is set for success. Will we continue to take a seat?

- Global Growth in Food: Not only due to the additional 78 million population growth each year, but rising incomes and shifting diets are multiplying the demand equation

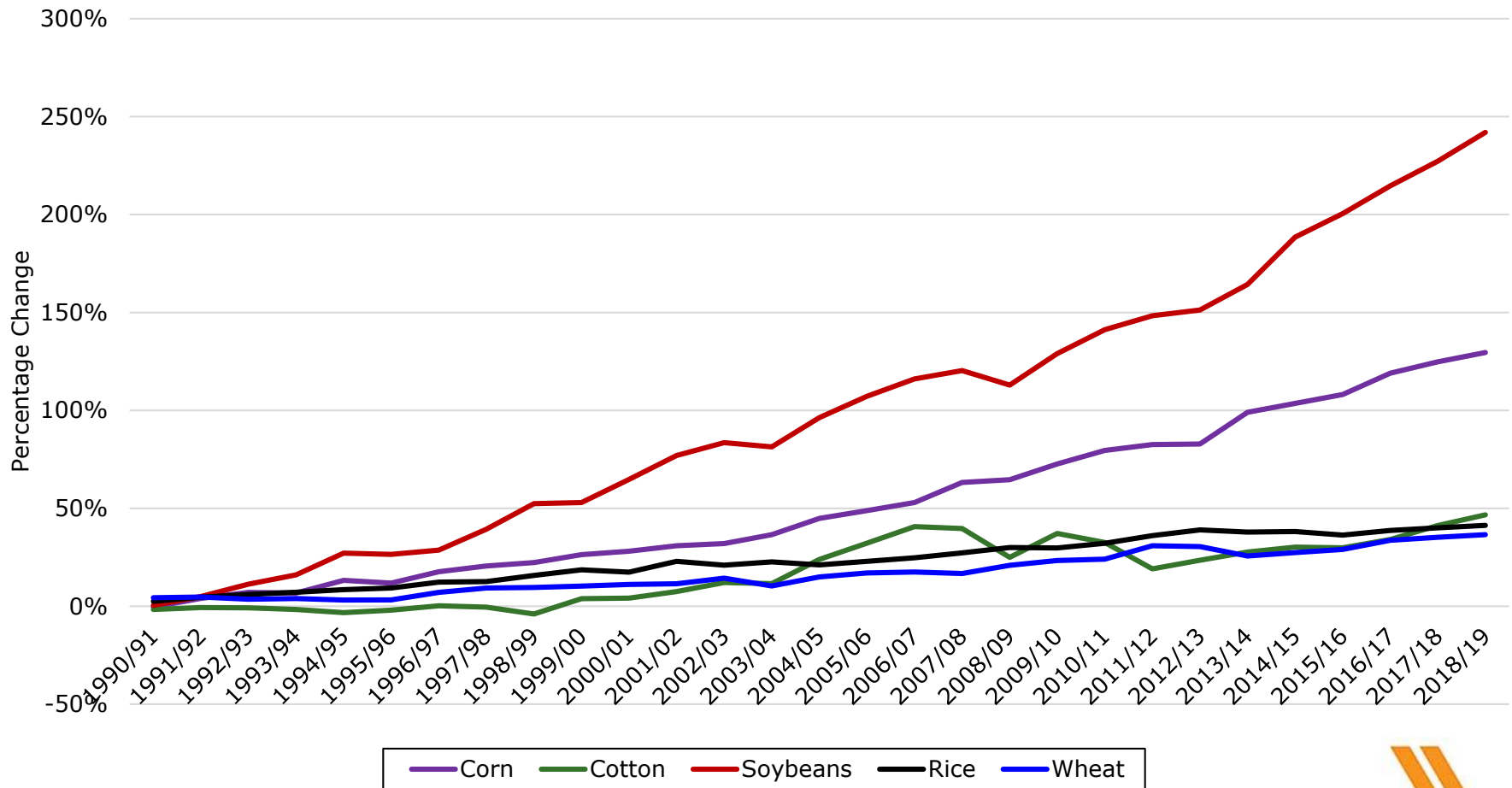
Source: AgriTrends & U.S. Soybean Export Council

More people live inside this circle than outside of it.



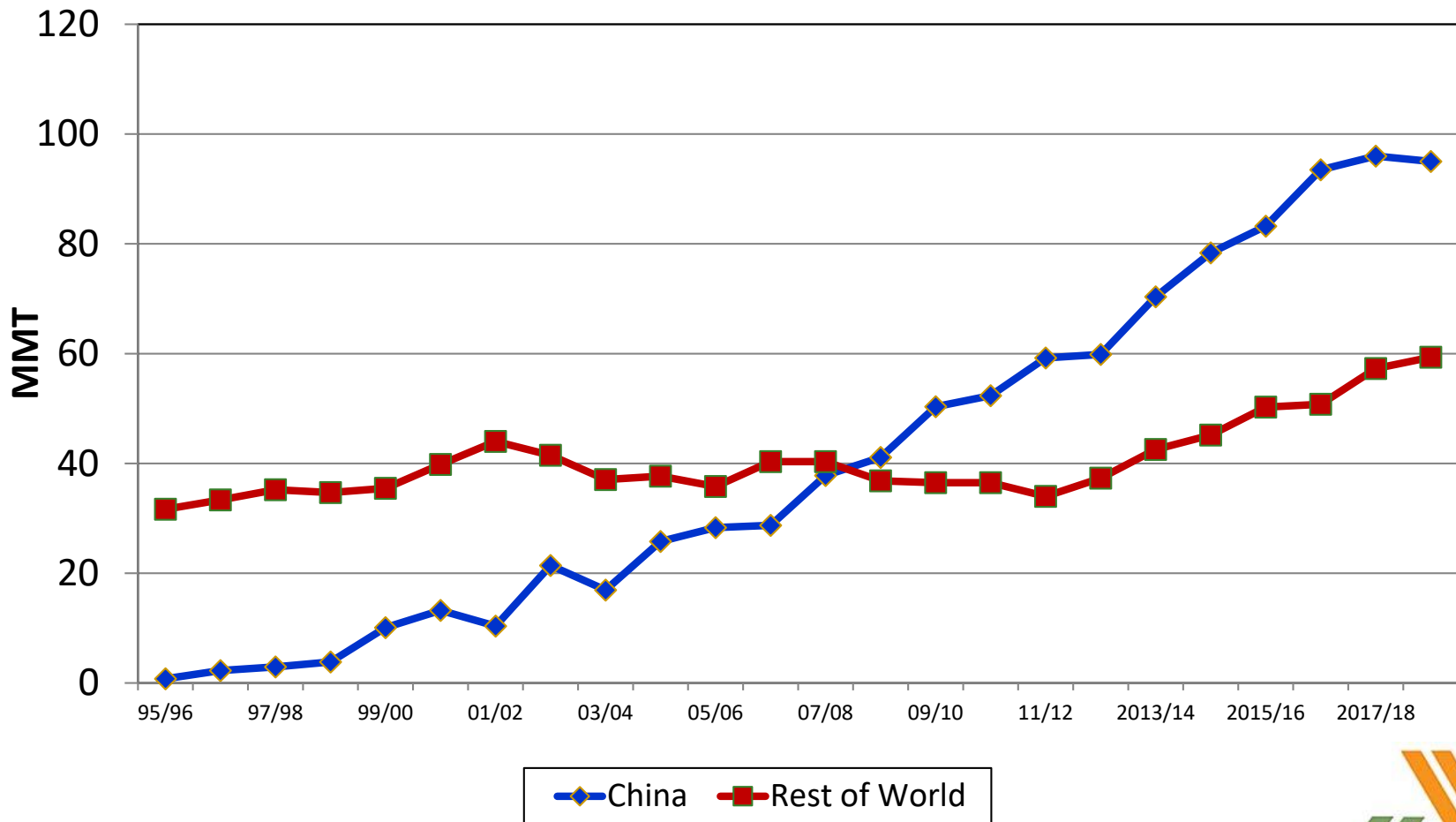
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Global Demand Growth for Corn, Cotton, Soybeans, Rice & Wheat: 1990/91 - 2017/18 & USDA Forecast for 2018/19 (Source: USDA)



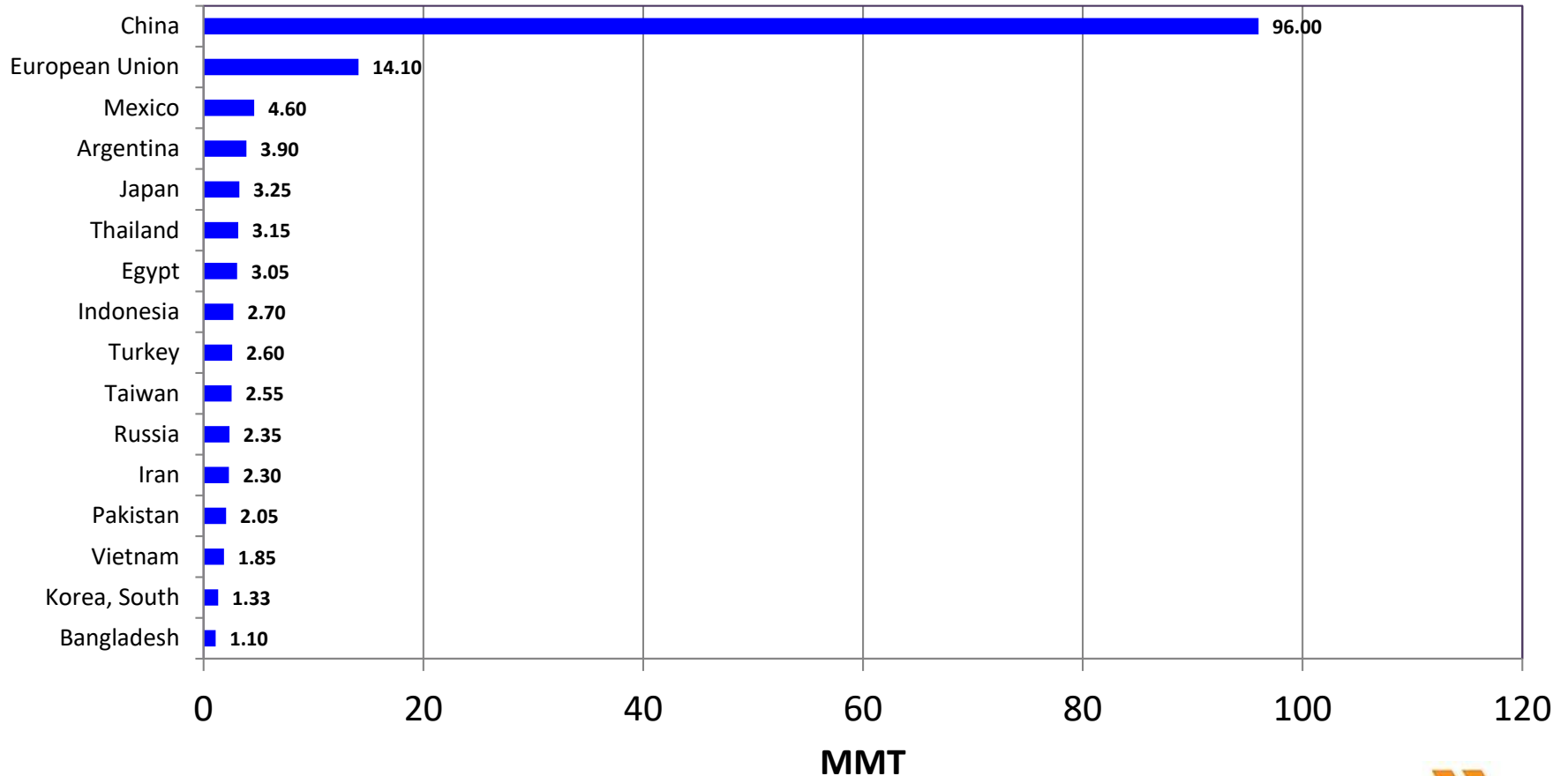
Soybean Imports by China & Rest of World

1995/96 – 2017/18 & USDA Forecast for 2018/19 (Source: U.S. Soybean Export Council)



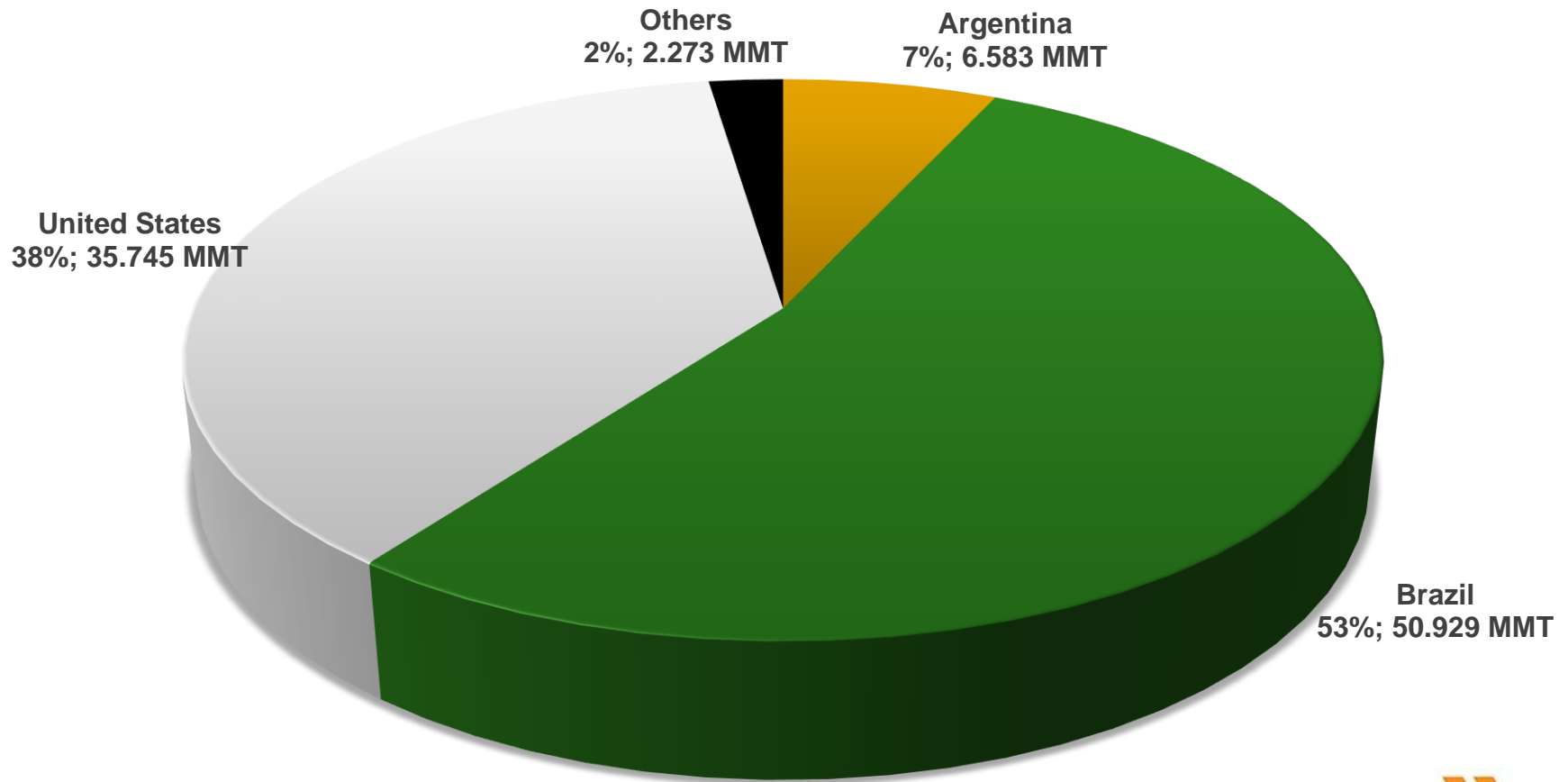
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World's Largest Soybean Importers Forecast for 2017/18 Marketing Year (Source: U.S. Soybean Export Council)



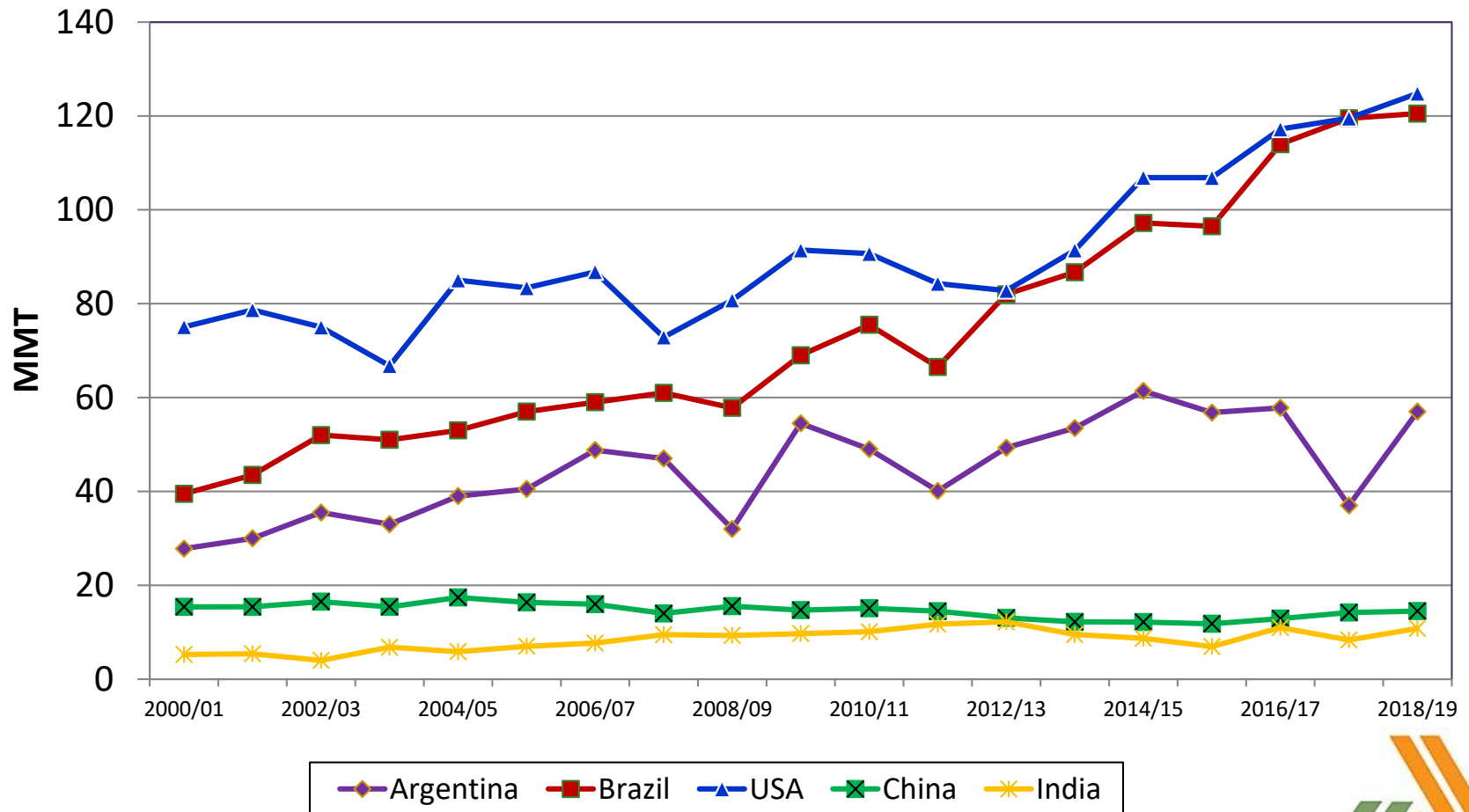
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China Soybean Imports by Country: 95.530 MMT Total (Source: USDA)



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Soybean Production: U.S., Argentina, Brazil, China, & India 2000/01 – 2017/18 & Forecast for 2018/19 (Source: U.S. Soybean Export Council)



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Effect of Past U.S. FTAs on Ag Exports

(Source: U.S. Soybean Export Council)

FTA	Date Entered into Force	Year Before Agreement		2016	Growth
		Million Dollars			Percent
Canada FTA/NAFTA	1/1/89	2,019		20,242	+903
Mexico - NAFTA	1/1/94	3,618		17,850	+393
Jordan	1/1/02	122		273	+124
Singapore	1/1/04	266		738	+177
Chile	1/1/04	144		848	+489
Australia	1/1/05	410		1,292	+215
El Salvador -CAFTA	3/1/06	239		560	+134
Honduras - CAFTA	4/1/06	249		649	+161
Nicaragua - CAFTA	4/1/06	125		218	+74
Guatemala - CAFTA	7/1/06	455		1,081	+138
Morocco	1/1/06	164		425	+159
Bahrain	8/1/06	15		65	+333
Dominican Rep.	3/1/07	629		1,175	+87
Costa Rica - CAFTA	1/1/09	608		701	+15
Oman	1/1/09	77		65	-16
Peru	2/1/09	424		1,146	+170
South Korea	3/15/12	6,976		6,202	-11
Colombia	5/12/12	868		2,377	+174
Panama	10/31/12	206		670	+225



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U.S. Soybean Exports: Year to Date (8-23-18); Top Whole Soybean Markets (Source: USDA)

	Year to Date	2016/17 (Same period)	2015/16 (Same period)	2014/15 (Same period)	Change vs. Last Year	% Change vs. Last Year
China	27.616 MMT	35.745 MMT	29.493 MMT	29.591 MMT	- 8.129 MMT	- 22.7%
EU-28	5.443 MMT	4.760 MMT	5.448 MMT	4.556 MMT	0.863 MMT	14.4%
Mexico	4.171 MMT	3.606 MMT	3.201 MMT	3.415 MMT	0.565 MMT	15.7%
Egypt	2.437 MMT	0.749 MMT	0.295 MMT	0.712 MMT	1.688 MMT	225.4%
Indonesia	2.377 MMT	2.278 MMT	1.958 MMT	1.876 MMT	0.099 MMT	4.4%
Japan	2.129 MMT	2.038 MMT	2.143 MMT	2.000 MMT	0.091 MMT	4.5%
Taiwan	1.734 MMT	1.279 MMT	1.226 MMT	1.311 MMT	0.455 MMT	35.6%
Pakistan	1.469 MMT	0.591 MMT	0.213 MMT	0.248 MMT	0.877 MMT	148.4%
TOTAL	47.376 MMT	51.046 MMT	43.977 MMT	43.709 MMT	- 3.491 MMT	- 6.8%

The Soy Transportation Coalition – Farmer funded & farmer led

Established in 2007. Comprised of 13 other state soybean organizations, the United Soybean Board, & American Soybean Association.

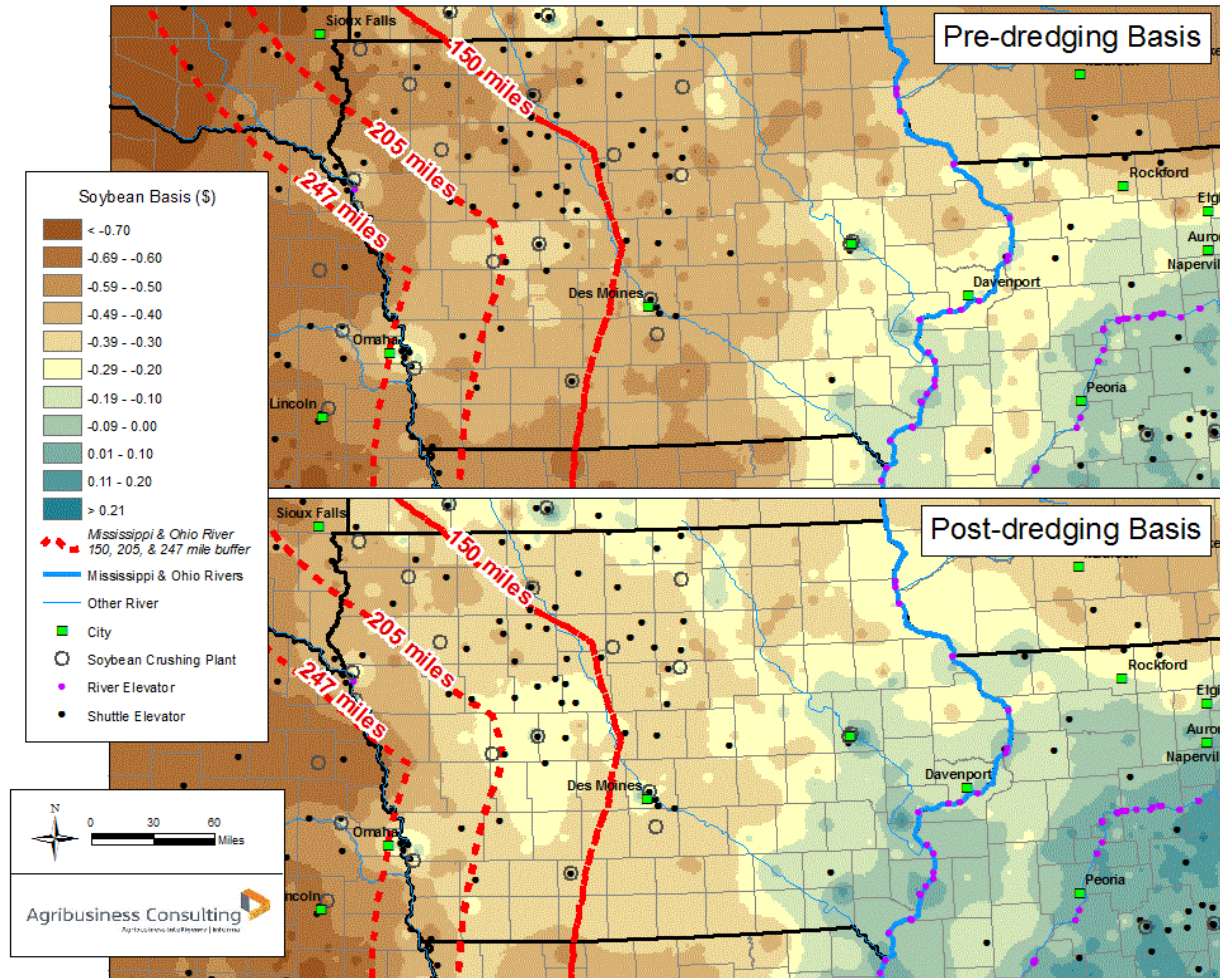


Top 10 “Most Wanted List” of Infrastructure Priorities

- Maintenance & rehabilitation of locks & dams to significantly reduce the potential for unexpected, widespread, & prolonged failure. Priority should be devoted to ensuring the reliability of locks & dams along the nation’s inland waterways.
- Dredging the lower Mississippi River between Baton Rouge, Louisiana, to the Gulf of Mexico to 50 ft.
- Ensuring the Columbia River shipping channel from Portland, Oregon, to the Pacific Ocean is maintained at no less than 43 ft.
- Permit six axle, 91,000 lbs. semis to operate on the interstate highway system.
- Increase the federal fuel tax by ten cents a gallon & index the tax to inflation. Ensure rural areas receive proportionate, sufficient funding from the fuel tax increase.
- Provide greater predictability & reliability of funding for the locks & dams along the inland waterway system.
- Provide block grants to states to replace the top twenty most critical rural bridges.
- Provide grants to states to implement rural bridge load testing projects to more accurately diagnose which bridges are sufficient & which bridges are deficient.
- Ensure full utilization of the Harbor Maintenance Trust Fund for port improvement initiatives.
- Permanent (or at least multi-year) extension of the short line railroad tax credit.



Dredging Lower Mississippi River: Impact on Midwest Agriculture



Iowa soybean farmers would receive \$71.5 million more for the value of their soybeans post dredging the lower MS River. U.S. soybean farmers - \$461 million more



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American Patriot Holdings Container on Vessel: Opportunity for U.S. Agriculture



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American Patriot Holdings Container on Vessel: Opportunity for U.S. Agriculture

Vessel Features:

- Exoskeleton Hull (Patent) - optimizes cargo payload
- Minimum Resistance Bow (Patent) - optimizes speed / minimizes wake
- Upriver speeds of 13 MPH vs. 5 MPH head current
- Parallel docking without assist tugs
- Environmental features (no wake, low emissions)
- Ability to turn in own length
- Redundant propulsion & take me home power



American Patriot Holdings Container on Vessel: Opportunity for U.S. Agriculture (Liner Vessel)



Length Overall	595+ ft.	Ballast Tanks	Eight (8)
Beam	134 ft.	Fuel	LNG
Height Above Water	48 ft.	Fuel Capacity	1000cm (3 trips)
Speed (Upriver)	13 MPH	Power Plant	Diesel Electric
Operating Draft	Up to 10 ft.	Main Generators	Four (4) – 2880 kW each
DWT	12.7k-14.8k LT	Horsepower	14,850
TEU Capacity	2500	Propulsion Drives (Stern)	Three (3) Drives
Reefer TEU Capacity	500+ Electric power as needed	Bow Drives	Two (2) (1000kw Each)
Crew Size	Expect 10-12	Deck Machinery	Electric
Trading Range	Mississippi River	Gross Registered Tons	> 10,000



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American Patriot Holdings Container on Vessel: Opportunity for U.S. Agriculture (Hybrid Vessel)



Length Overall	595 ft.	Ballast Tanks	Eight (8)
Beam	100 ft.	Fuel type	LNG
Height Above Water	Approx: 40-42 ft.	Fuel Capacity	3 trips
Speed (Upriver)	13 MPH	Power Plant	Diesel Electric
Operating Draft	Up to 10 ft.	Main Generators	TBD
DWT	9000+ LT	Horsepower	TBD
TEU Capacity	1800+	Propulsion Drives (Stern)	Three / Four Drives
Reefer TEU Capacity	300+ Electric Power as Needed	Bow Drives	TBD
Crew Size	Expect 10-12	Deck Machinery	Electric
Trading Range	Tributary Rivers	GRT	TBD



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STC Feasibility Study

- Major Objective:
 - Evaluate competitiveness of grain exports via PPHTD / APH all water route to Asian markets vs. current intermodal patterns
 - Test economics from major AG consolidation locations adjacent to Mississippi, Illinois, Missouri and Arkansas Rivers
- Conclusions:
 - Significant savings results from all water routing of containerized grains
 - Longer trade routing to Gulf Coast offset by significant West Coast delays
 - New system will increase demand for container vs. bulk shipments
 - Cost competitive with less contamination



Funding approach for locks & dams – A recipe for cost overruns, inefficiency

- **How we allocate money is just as important as how much money we allocate.**
 - ❑ Cost overruns & project delays should not be viewed as unintended consequences but rather as predictable outcomes.
 - ❑ We endeavor to construct expensive, multi-year infrastructure projects via unpredictable annual appropriations.
 - ❑ Could it ever be possible for the legislative process for improving locks & dams to resemble surface transportation?



Funding approach for locks & dams – A recipe for cost overruns, inefficiency

PREDICTABLE AND RELIABLE FUNDING APPROACH: LOWER COSTS; GREATER BENEFITS



\$500 million was provided up front. Construction was completed in 5 years without delay. Inputs were purchased in bulk or secured up front. No inflation or repeated mobilization costs.

CURRENT UNPREDICTABLE AND UNRELIABLE FUNDING APPROACH: WASTING TAXPAYER DOLLARS; DELAYING TAXPAYER BENEFITS



Time	Allocation	Inflation	Mobilization Costs	Piecemeal vs. Bulk Purchasing	Available for Construction
Year 2 Month 1	\$150.0	\$3.0			\$147.0
Year 3 Month 1	\$140.0	\$5.6	\$7.0	\$7.0	\$120.4
Year 5 Month 1	\$180.0	\$14.4	\$9.0	\$9.0	\$147.6
Year 5 Month 12	\$70.6	\$7.1		\$3.5	\$60.0
Year 7 Month 11	\$32.7	\$4.4	\$1.6	\$1.6	\$25.0
Total	\$573.3	\$34.5	\$17.6	\$21.2	\$500.0

Funded by the soybean checkoff.

- Inflation (2%)
- Mobilization (5%)
- Piecemeal vs. Bulk Purchasing (5%)
- Available for Construction



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Increase federal fuel tax by 10 cents & index to inflation

FUEL TAXES PAID TO DELIVER FARM PRODUCTION

	FARMER 1	FARMER 2	FARMER 3
Total Acres	1,000	2,000	3,000
Soybean Acres	500	1,000	1,500
Corn Acres	500	1,000	1,500
Soybean Production (50 bu. per acre)	25,000	50,000	75,000
Corn Production (175 bu. per acre)	87,500	175,000	262,500
Total Production (in bushels)	112,500	225,000	337,500
Truckloads of Soybeans (900 bu. per load)	28	56	83
Truckloads of Corn (964 bu. per load)	91	182	272
Total Truckloads	119	238	355
Miles (Roundtrip) to/from Delivery Location	50	200	300
Total Miles Driven Each Year	5,950	47,600	106,500
Miles Per Gallon of Fuel	6	5	4.5
Number of Gallons of Fuel Purchased	992	9520	23,667
Amount Paid in Fuel Taxes (\$0.5976 - Current Average Diesel Tax Per Gallon)	\$593	\$5,689	\$14,143
Amount Paid in Fuel Taxes with 10 Cent Increase (\$0.6976 Per Gallon)	\$692	\$6,641	\$16,510
Additional Annual Cost to Farmer to Transport Production	\$99	\$952	\$2,367

NOTE: The above chart only reflects production from the farm. Inputs to the farm (fertilizer, seed, etc.) will add to the overall cost.



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Bridge Load Testing Initiative

- Working with local government, state government, &/or universities to promote rural areas having greater access to load testing technology. The greater utilization of this technology will:
 1. Reduce the likelihood of rural bridges being unnecessarily load restricted
 2. Increase the likelihood of taxpayer funding being allocated more strategically to those bridges in greatest need of repair or replacement
- STC has authorized \$10,000 to facilitate bridge load testing projects in each of the 13 states that comprise the organization. Total funding allocated: \$130,000. Tested bridges must be located in rural areas in which soybeans are transported.



Bridge Load Testing Initiative: Midland County, Michigan



- Project agreed to with Midland County Road Commission
- Total up front cost of the project: \$22,000
 - Sensor kit with covers, training manuals, & shipping
 - On site training (approximately 6 hours)
 - Calibration spreadsheet
- $\$22,000 - \$10,000$ (STC contribution) = $\$12,000$ total up front cost to Midland County



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Bridge Load Testing Initiative: Midland County, Michigan



- 3 bridges tested summer – fall of 2017; Bridge #1: 10% increase; Bridge #2: 30% increase; Bridge #3: 30% increase; Load postings on all three bridges have been removed

- Total time to test a single bridge: 6-9 hours

- 2-3 hours: Attach sensors to the underside of the bridge (allow sufficient time for the epoxy to cure after attaching)
- 1 hour: Conduct actual testing by having test load cross the bridge at various points; Record strain data
- 2-3 hours: Remove sensors from bridge
- 1-2 hours: Enter data into spreadsheet & any related calculations

- Additional states & counties have agreed to a project



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What I want the county &/or state to be able to say...

- “We are providing savings to our constituents who paid for & use our rural bridges.”
 - On average, weight restricted bridges tested in Midland County, Michigan, resulted in a 5 mile detour
 - Bridge #1: On average, 6 trucks were impacted each day & were therefore subject to the detour
 - 30 miles of detour were incurred each day (6 trucks X 5 miles)
 - 10,950 miles of detour were incurred each year (30 miles X 365 days)
 - \$13,688 annual cost of the detour to affected constituents (10,950 miles X \$1.25 cost per mile)
 - Bridge #2: On average, 13 trucks were impacted each day
 - 65 miles of detour were incurred each day (13 trucks X 5 miles)
 - 23,725 miles of detour were incurred each year (65 miles X 365 days)
 - \$29,656 annual cost of the detour to affected constituents (23,725 miles X \$1.25 cost per mile)



What I want the county &/or state to be able to say...

- Cont'd: "We are providing savings to our constituents who paid for & use our rural bridges."
 - On average, weight restricted bridges tested in Midland County, Michigan, resulted in a 5 mile detour
 - Bridge #3: On average, 25 trucks were impacted each day
 - 125 miles of detour were incurred each day (25 trucks X 5 miles)
 - 45,625 miles of detour were incurred each year (125 miles X 365 days)
 - \$57,031 annual cost of the detour to affected constituents (45,625 miles X \$1.25 cost per mile)
 - \$13,688 (Bridge #1) + \$29,656 (Bridge #2) + \$57,031 (Bridge #3) = \$100,375 annual savings to Midland County taxpayers from removal of load restrictions on those three bridges



Thank You

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